

HOUSE OF ASSEMBLY

WEDNESDAY 02ND DECEMBER 2015

MOTOR VEHICLES (TRIALS OF AUTOMOTIVE TECHNOLOGIES) AMENDMENT BILL

Second Reading

Adjourned debate on second reading.

(Continued from 1 December 2015.)

Mr PEDERICK (Hammond) (15:49): I rise to speak to the Motor Vehicles (Trials of Automotive Technologies) Amendment Bill 2015. The bill enables the minister to authorise trials of automotive technologies and issue exemptions from the relevant provisions of the Motor Vehicles Act 1959—and this is obviously the act we are amending here today—and any laws that regulate a driver's use of motor vehicles on roads.

The government is seeking to place South Australia ahead of the technological curve and be a lead jurisdiction in real-life trialling of driverless vehicle technology in South Australia. Certainly, I note that, while this is the first jurisdiction in Australia to be trialling driverless cars on our roads, it is certainly not something new internationally. These trials have to be individually approved by the minister because this bill does not permit driverless cars to operate on these roads unless they are individually approved.

The figures that the government are putting out are saying that it is estimated that the driverless vehicle industry will be worth \$9 billion in Australia in 10 to 15 years' time. It will be interesting to see how many jobs that will create in South Australia because we certainly need thousands of jobs to come to this state.

In briefings by the department, it was made clear that this bill is purely for the trial of autonomous vehicles and not for commercial legalisation, and that legislation was not required for the trials that were run on the Southern Expressway because it was closed. But what this legislation does is open more easily regulated avenues for future trials, although we have not seen any announced at this stage.

In regard to the automation of driverless vehicles and autonomous vehicles, it can range from full autonomy, where no human intervention is required, to vehicles where human intervention may be required under certain conditions. Different countries and different companies are using different terms to describe these new technologies. Systems are distinguished by their degree of autonomy and by the functions that are autonomous; for example, whether it is keeping the vehicle in a lane at constant speed or automatically braking to avoid obstacles, which I think there needs to be a bit more work on.

Autonomy has been scaled from 1 to 5 and a local Holden Commodore fits in category 3 so there are some operating items on Commodores which are certainly classed as part of the system. A Volvo, which was at the driverless

conference, is a category 4 car and there has not been a category 5 driverless car shown here at this stage. This legislation is about potentially luring car manufacturers here to road-test their vehicles. The hope is that having car makers testing here, they can generate and grow tech industries.

Cohda Wireless is a company based in Adelaide and they are involved. South Australia is already very much at the cutting edge of this technology across the world. Certainly, driverless car technology has been put in place through Google, Uber and other car makers. A lot of advancement in driverless cars and the technology was achieved years ago, so therefore the real benefit for South Australia was if we had locked in three or four years ago on some of the ground floor research and development that could have been done in this state.

I acknowledge that some of the work that was done by commercial overseas companies was displayed at the Driverless Car Conference in early November and, essentially, we are road-testing overseas cars. I certainly believe that there are growth opportunities in the vehicle to vehicle, and also the vehicle to infrastructure, radar and connected technologies, but there has not been investment in this area by the government at this stage.

There are already certain functions of cars where they are quite driverless to a degree and there are other jurisdictions that are well advanced in this space, but the real benefit will come when vehicles can talk to each other and we do not need traffic lights, and I think we are a fair way off that.

There was a great deal of thought going on around the world in regard to what laws will be necessary for the general operation of driverless vehicles. Their widespread operation will pose complex legal challenges, in particular to determine liability in the event of any accident. I believe completely new legislation will have to be drawn up to allow driverless cars on our roads outside of this testing.

In regard to other jurisdictions, in the United Kingdom, the green light for testing driverless cars on public roads was given on 11 February this year, 2015. Already, in the United Kingdom, advanced driver assistance systems are breaking into the market, improving car safety and leading to lower insurance premiums. These announcements show the United Kingdom's strong intent to take the technology to the next level and investigate how vehicles that can take greater control could improve our driving experience and increase safety further.

In the United States, there has been an article by the Stanford Law School that states that current United States vehicle codes generally do not envisage, but do not necessarily prohibit, highly automated vehicles. However, to clarify the legal status and otherwise regulate such vehicles, several states have enacted or are considering specific laws. Four US states have successfully enacted laws addressing autonomous vehicles and their trial use on public roads.

There has certainly been consultation throughout various sectors here in South Australia. SARTA and other industry bodies have discussed the concept of autonomous vehicles at some length through the National Transport Commission to review laws to provide for driverless trucks. It is noted that the industry is not opposed to the notion; however, it is a long way off, and they see a series of

problems that need to be overcome. A huge challenge would be how to keep a truck driver who is doing nothing but watching technology alert enough to spot a problem and react quickly.

Concerning autonomous cars, the trucking industry would like to ensure that the driverless cars are programmed in a way that does not replicate the problem that already exists on our roads with some motorists cutting in front of trucks just because they can fit, reducing braking space and increasing the risk of accidents. It is certainly something that I see many mornings coming down the hill into Glen Osmond from the freeway.

People do not give enough room to trucks that wish to turn right to go up Portrush Road on the freight route around Adelaide. It could be loads of grain, stock, etc., or general freight. They stay in the left lane as long as they can, put their indicator on and want to get to the right, and people just do not give them room.

I had to do it years ago when driving trucks into Adelaide. They do not give you room. You pick the spot where you reckon you can fit the length of your truck, and you just have to swing it in the gap because they do not give you space. They soon learn that they are not going to win if they do not pull up, so they really should take notice, but that only happens when people are absolutely stuck for a spot to get into. SARTA certainly believes that it is essential that the protocols and standards involved will deal with this; however, some direct dialogue between the trucking industry and the vehicle industry would be required.

I note a comment from Cohda Wireless that driverless cars are a disruptive technology and, as such, it is difficult to predict exactly what that might mean for South Australia. We know that in this state there is both high-tech expertise and automotive expertise and, certainly, if we can create the right environment, then, as Paul Gray from Cohda has indicated, amazing things will happen.

Flinders University gave a presentation at the International Driverless Cars Conference in November, where they showcased their autonomous vehicles. One is an autonomous catamaran and the other is a small, archive box-sized autonomous robot vehicle called Husky. Flinders University would like to see future autonomous vehicle trials integrated into the Flinders campus as a series of buses connecting the campuses; however, that goal is a while off.

The Centre for Automotive Safety Research generally support this bill. As the area is evolving so rapidly, as technology unwinds around the world, it is important that fast action is taken to permit large global companies the opportunity to come to our state, to enhance the opportunities for further commitment and engagement with local companies. We certainly want to make sure that, once these big companies have the opportunity to come to South Australia, they do not pack up and go elsewhere but stay and develop those technologies here to their full fruition. Certainly, CASR believe there is some great capability in this state, and they hope it will capture some of the manufacturers' attention.

The Motor Trade Association of South Australia has reviewed the bill and has some recommendations and concerns. They believe that stakeholders must be consulted prior to the passage of legislation that goes beyond this legislation because this only deals with the trial stage, but they are also concerned that required insurance may not cover all foreseeable risk situations. Furthermore, proper driver capability is required to override technological errors where they may occur.

The MTA believes that, before the minister makes an exemption to another law for the purpose of a trial, the relevant stakeholders should all be consulted. The MTA is also concerned that the maximum penalty for breaching the laws is only \$2,500. From some of the correspondence I have received recently from one or two constituents, I note that you can get a fine not far from that for some fairly simple offences committed on our roads. The MTA believes that this penalty seems low when the risks associated with a break in the technology may lead to serious consequences.

Carnegie Mellon University has expressed that they are interested in working in this space. They are quite advanced in the United States and would like to convey their work into South Australia in order to springboard their advancement. They are seeking a \$US25 million commitment—\$1 million to build an autonomous car at the university, with the rest spread out over five years to carry out research into connectivity and driverless technology which would allow cars to speak to intersections and other vehicles. The university's plan is to produce PhD and master's students for the industry. Carnegie Mellon sees this as a long-term investment in South Australia for industry growth and more local jobs.

The RAA put out a media release in July 2015. They are well and truly interested in the technology and the potential it has to remove human error and save lives. They believe that, as the issues around the new autonomous technology become better understood, we will start to see some more stringent legislative changes. They also recognise that there is a lot of money internationally in emerging driverless technology, and they believe that this legislation is an important step in enabling investment in South Australia.

The member for Flinders brought up the issue of the global positioning system technology that is used on farms. Sometimes it is used to set up a base station and can be operated within a kilometre or two of a base station. A lot of it is obviously linked directly to satellite, and I believe it is vital to get that connectivity absolutely right.

In the agriculture sector, as long as it is all working, the connectivity is so good that you can have an 18 metre front—and the fronts can be up to 60 feet now, which is about 18 metres in the new language; they still talk feet because a lot of these machines are made in the United States—and you can have a computer from the harvester talking to the tractor towing the chaser bin basically instructing it where to drive, so it is hands-free for the chaser bin operator to get the grain out of the harvester.

That is pretty flash technology. From my experience, when I was doing it, there is not much room between the edge of the comb, and you can soon have some

chaos if you do not keep your eye out: you can end up running over the front of the harvester. There is a lot of opportunity here and it just shows how far we have come in this state.

At the turn of the 20th century, nearly all our transport needs were satisfied either by horses or horses and carts, and that has transferred over time. Right through World War I and World War II, there was still a reasonable amount of horse traffic on the roads but, as cars and trucks came on board, it was like a new world. You could make this comparison: this may be the brave new world people were facing over a hundred years ago as the technology advanced right around the world. It is amazing when you think about it. We have come a long way from the first cars, where people were not sure how to control them so they had a man with a red flag walking in front—they obviously did not go too fast—to keep them on the straight and narrow.

Obviously over time that went away, but in later times we see speed limits no matter where you are in this state or in the country. On the open road speed limits are usually 100 or 110 km/h, and the more roads around the state that we can keep at least at 110 km/h, so that they are safe, is what we need to do. I know the road safety minister has had a bit of a campaign in regard to this, but what people need to understand is that just because the money is not being spent to keep these roads up to scratch and the maintenance being done, that cannot be used as an excuse to cut back roads to 100 km/h. Technology in cars these days is so far ahead of cars that were driven in the fifties through to the seventies—in the main we are not driving clunkers anymore and we have pretty good vehicles—that we need to keep up road funding in regard to maintaining safe traffic and safe passage for all.

I think there is going to be a lot of work to be done and a lot of technology to be put in place with the myriad issues that can happen on the road in regard to a full driverless vehicle. I have a bull bar, or a roo bar, fitted to my work car for a reason. This car was only a few weeks old and bang, there it goes, coming home from Karoonda from a night meeting. They jump straight out in front of you—and I know the Minister for Transport is well aware of kangaroos that do not get out of the way. It is a real issue and, sadly, I have done it several times. These things, kangaroos, just come out of nowhere at the last minute, and you just look at that steel eye for what seems like a few seconds but is a very short space of time, and you think, 'Oh well, let's see how much of a mess this makes of the car.' At least with that roo bar, or bull bar, you can drive home.

I guess everyone was a little amused when the minister had his road trial with the inflatable kangaroo and, for some reason, it did not happen the way it was meant to. It is the sort of moment the media love, but the minister seemed to hold his cool as the car took out the inflatable kangaroo; he just smiled and looked at the driver as if to say, 'What was all that about?' I did send him a text later that day saying, 'I could do with that car down the Coorong,' because it might get rid of a few other pests that are floating around. I think the Premier was a bit concerned about going in the car the next day, so I guess he put the Minister for Transport out there as the bunny. He took the rap, but I think he took it with good humour.

However, this just shows that we need good technology. If it is going to make a mistake right at the moment when you do not need it to make a mistake, it just shows that there is a lot of work to do. It shows that there is great work that has been done in this field, but there is so much more work that needs to be done, especially with cars that will be on long, lonely roads that not only have to put up with the vagaries of traffic—whether that be cars or trucks—but also where there is suddenly stock out on a road or where there are animals like kangaroos and wombats and the like.

I think it is a great idea, but I think we have a long way to go. In my mind, I compare it to when cars first started coming onto our roads well over 100 years ago. Certainly, in 50 years' time we will probably be sitting back and saying, 'Well, that was easy, wasn't it?' We have a lot of work to do yet, but I certainly support the bill.